FAUNAL PROCESSING

By

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FAUNAL REMAINS PROCESSING

I. RECOVERY

- For C.R.M. (Cultural Resources Management) always try to set aside at least $200-300 dollars for at least the initial processing of faunal remains. Large samples require considerably more (+ $ 1000) depending on total size and physical condition.
- Faunal materials are recovered from:

    1. Excavation Units (in situ).
    2. Dry Screens (use 1/8" mesh or smaller).
    3. Water Screens (use 1/8" mesh overlain by window screen).
    4. Liquid Flotation (window screen mesh or smaller).

- Never disgard any faunal remains.
- Always try to collect flotation samples in constant volumes. This makes comparisons easier and more significant.
- Fragile bone recovered in the field should be wrapped in tissue and then aluminum foil and packed in an uncrushable container for transportation.
- The majority of the faunal remains can be packed in bags.
- Do not pack or store large amounts of faunal material in a single bag either in the field or the lab. This causes breakage, etc.
- Do not pack heavy objects with faunal remains. This tends to crush the more fragile material.
- Pack faunal remains in sturdy boxes for shipping. Put wadded newspaper between layers of packed specimens. This will act as a buffer during transportation.
- Make sure all the samples have provenience.

II. CLEANING

- A good cleaning job will save time and money during analysis.

A. GENERAL PURPOSE OF CLEANING

- To remove dirt (inside and outside) from every faunal specimen (bone and shell) in order to:

1. Identify the morphology (structure) of the specimen which aids in determining the species.

2. Identify modifications which aid in determining the depositional environment of the specimen.

3. Identify any evidence of human modifications from:

   - food processing
   - tool manufacturing
   - the manufacture of non-utilitarian objects such as ornaments, gaming pieces and musical instruments.

- Most cleaning consists of washing faunal specimens.

- Make sure materials are not mixed while washing.

B. DO NOT WASH:

- Do not wash faunal specimens (bone and shell) that are soft and badly deteriorated over their entire surface. This includes only pieces that are "falling apart". Remove any dirt with a probe.

- Wash carefully those specimens exhibiting surface peeling and/or flaking, cracking, splitting, dry rotting, or pitting on most of the surface.

C. WASHING

- Any bone and shell specimen can be washed, to a certain degree, if at least part of its surface is intact and/or it has a joint end (s).

- Tap water is the easiest and most accessable liquid used for washing. Distilled water is better but much more costly. It does not contain many chemical additives that often cause cracking and excessive drying of faunal materials.

- Do not use soap or detergents for washing. They tend to cause chemical breakdown and excessive dry-cracking of faunal materials.

- Do not submerge faunal specimens in water or under a running faucet for long intervals. Likewise, do not leave any specimens in water overnite. Excessive saturation with water tends to increase cracking, splitting, peeling and flaking of the specimens.

- Wash specimens with soft brushes or toothbrushes.

- Do not brush hard. Use light, even strokes. Be careful of cracks or splits especially around the joint regions. If too much force is used during brushing the joints will break off.

- Wash faunal remains with cool water. Do not use hot or very cold water. This will cause expansion/contraction of the specimens increasing the rate of cracking, splitting and peeling.

- Occasionally, chemicals can be used to facilitate the cleaning of faunal remains. Store grade Hydrogen Peroxide will remove or, at least, loosen hard, dried, fine sediments such as clays. This chemical is especially useful when dirt or sediment is trapped inside a specimen or in cracks or fissures in the bones. However, do not leave the specimens in this solution too long. Take them out after 20 minutes or when the bubbling action has stopped. Make sure the specimens are well rinsed immediately after the peroxide washing.

- Occasionally, if there is little dirt or only dust on the specimens, they can be dry brushed. Dry brushing is also useful when cleaning small, fragile specimens especially fish or mammal elements. Use a soft brush and light strokes when brushing.

- When cleaning faunal materials be sure to hold specimens securely so they do not fall. Many good specimens have been destroyed due to careless handling.

D. General Washing Procedure

- Be careful not to mix faunal remains when washing materials from more than one provenience.

- It is preferable to work near a sink when cleaning faunal materials.

- Have a trash container handy. First, attempt to remove large clumps of dirt with a probe.

- Set up a drying area for the specimens. Many labs use drying racks with screens in the bottom that sit on top of each other. Field screens can also be used if the mesh size is small. If screened racks are not available then use paper towels or any other absorbent material. Screens are good because specimens are exposed on all sides which facilitates drying.

- Wet the brush and the specimen and then brush lightly. As some of the dirt loosens, wash it off.

- When all the dirt is removed place the specimen on the drying rack. Make sure all the specimens have provenience identification.

III. DRYING

- As noted above, place washed specimens on drying racks or towels, etc., immediately.

- Do not dry specimens on top of each other. This impedes the drying process.

- Do not let the bones sit in moisture while drying. This is a major problem when using towels. If towels are used turn over the specimens periodically. As mentioned elsewhere, excess moisture causes excessive deterioration of the faunal material.

- Do not dry or store materials near heated areas such as steam registers, vents, steam pipes, direct sunlight through windows causes excessive cracking, splitting and warping of the specimens.

- Make sure specimens have provenience identification. DO NOT MIX!

- Do not put the specimens in bags until they are completely dry. Moisture tends to build up in the bags (especially plastic) which facilities deterioration.

- As soon as the specimens are dry, place them in bags with provenience labels attached to the bags.

IV. SORTING

- Sort 1 provenience at a time per person or make sure different proveniences are kept separate during the sorting process. This eliminates the possibility of mixing proveniences.

- Do not start a sample that cannot be finished in the same period. This, also, decreases the chance of mixing or losing provenienced materials.

- Remember: "When in doubt sort it out"!!!

- First, all bone specimens should be sorted into:

    1. Smaller fragments.

    2. Larger fragments.

- See flow chart, figure 1.

- Next, sort-out all specimens that have 1 or more articulation joints intact. Do this for both the "smaller" and "larger" fragment groups. Also, "Complete" (whole or unbroken) specimens should be sorted into this group.

- Then, separate-out the very irregular, odd angled specimens from the "smaller fragments" group. Do the same for the "larger fragments" group. For now, set this material aside.

- Next, the main groups will be sorted by their broken cross-section shape.

- First, separate the "larger fragments" group into specimens exhibiting:

  1. flattish cross-sections, ex:

  2. or curvish cross-sections, ex:

- Now, do the same for the "smaller fragments" group.

- Remember: Sort-out any specimen that even vaguely resembles the "flattish" or "curvish" shapes shown above. This includes completely round, oval or tubular specimens as shown in the "curvish" types.

- The leftover specimens (if any) are grouped as miscellaneous fragments.

- Fish scales should be separated-out and put in containers.

- Shellfish (Bivalves) remaines should be sorted into 2 groups:

  1. Specimens with any part of the hinge intact. This includes whole or unbroken specimens.

  2. Specimens with no hinge intact.

- Then, separate both these groups, where possible, by the shape

of the shell.

- Snails (Gastropods) should be sorted into groups by the shape of their shells.

- Then, the snails should be separated into groups with:

  1. Smooth shells.

  2. Non-smooth shells.

- This completes the first phase of sorting.

- If time and money are short then stop at this phase. Pack and ship material.

SECOND SORTING

- Remember: be careful not to mix proveniences.

- For all of the bone groups sorted in the first phase, sort-out all the specimens that are:

  1. Burnt (black or dark blue color),

  2. or Incinerated (white and gray color).

- Any specimen that is burnt and incinerated, put it in the "incinerated" group.

- Now, sort-out, from each bone group discussed above, specimens with evidence of modifications such as scavenging (tooth marks) or gnawing, cutting, sawing, scratching, polishing, smoothing or grinding. Sort-out all specimens that look like tools, ornaments, etc.

- Bivalve (shellfish) shell material should be separated (if possible) into a burnt/incinerated (gray to darker gray color) group.

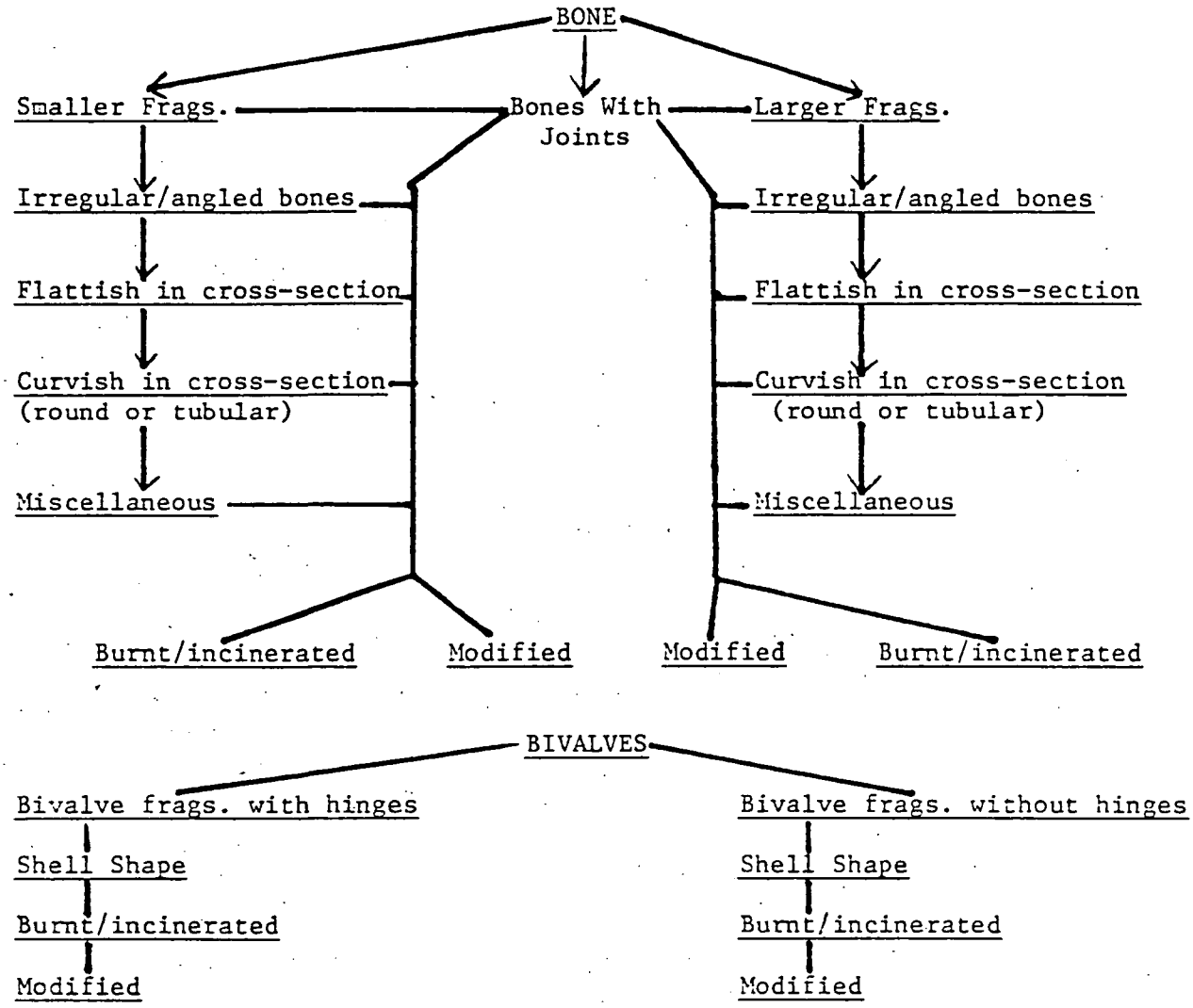
- Snail (Gastropods) shell remains should be separated (if possible) into a burnt/incinerated (gray to darker gray color) group.

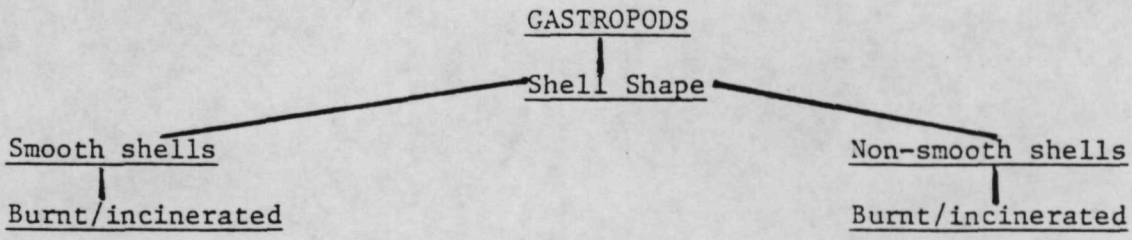
- Separate all bivalve shells exhibiting human modifications: cutting, grinding, drill holes, etc.

- Now, the initial sorting process is finished! The materials should be labeled and prepared for analysis at this point.

Figure 1. FLOW CHART:

SORTED FAUNAL GROUPS





*** - Remember, the preceeding faunal sorting procedure is designed to prepare faunal materials for analysis by a specialist. This will save considerable time and money.

V. LABELING

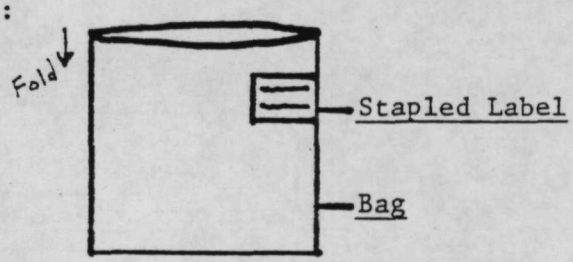
- It is unecessary to label individual faunal specimens unless they are tools, etc.

- Make sure the specimens are in well marked bags or, in some cases, uncrushable containers.

- Put specimens in plastic bags if available. They are "see through" and can be washed and reused.

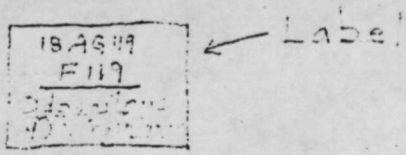
- If using plastic bags, put the labels inside and staple them near the top so they are easy to read.

- Staple the label at the upper side of the bag above the specimens:



- Write labels with waterproof pens or markers.

- Make sure each label is legible. Put only essential site provenience and the bone type on the front of the label. Other comments can go on the back:



- Put small specimens such as scales, teeth or shell beads in gelatin capsules for protection prior to packing or storage.

- Once the specimens are placed in labeled bags, double fold them to ensure the material will not work loose.

- Then staple the bags closed. Do not use tape or other adhesives. This material is difficult to get open without damaging the top of the bag.

- There are several standard clear, Polyethylene bags used for storage:

  1. 2 x 3 in. (1.5 Mil. Standard).
  2. 3 x 5 in. (1.5 Mil. Standard).
  3. 5 x 7 in. (1.5 Mil. Standard).
  4. 7 x 12 in. (1.5 Mil. Standard).

- The standard sizes for gelatin capsules are:

  1. No. 000
  2. No. 00

VI. ANALYSIS

- In most cases the faunal materials should be analyzed by a zooarcheologist or a faunal specialist.

- If a shortage of time and money is a problem, then, at least, send the small faunal specimens to a specialist for analysis. Small species, especially mammals, fish, gastropods (snails), etc., are excellent indicators of micro-environments and in some instances, seasonallity. In any event, a faunal specialist should be consulted when considering faunal research.

- When shipping faunal remains, use sturdy boxes with layers of paper between layers of specimen containers.

- Be sure to send all pertinent information regarding the faunal material. This includes site and feature descriptions and maps

with specific site data. Also include information about the processing of the material.

- Make arrangements for return shipping of all faunal materials as soon as the analysis is completed.

VII. STORAGE

- Make sure that all faunal remains are stored in a secure area.
- If possible, faunal materials should be packed in water and rodent resistant boxes. If not, make sure the boxes are off the floor.
- Do not store faunal material in hot areas. They should be kept in a cool, dry area.
- All boxes should have observable provenience labels.